The Influence of Immersive Virtual Reality Technology on the Presentation of Cultural Symbols in Digital Shadow Puppetry: From the Perspective of Technology Changing Tradition

Enze Li*
Animation Department, Huanghuai University, Zhumadian Henan 463000, China
20141353@huanghuai.edu.cn

Xiaowan Xie
Art and Design Department, Huanghuai University, Zhumadian Henan 463000, China
20192068@huanghuai.edu.cn

Abstract: Traditional shadow puppetry is one of China's intangible cultural heritages, characterized by the use of paper silhouette projection on a screen. With advancements in science and technology, immersive virtual reality technology offers new possibilities for digital shadow puppetry presentations. This paper aims to explore the impact of immersive virtual reality technology on cultural symbols in digital shadow puppetry from a technological perspective that changes tradition. Firstly, we introduce the meaning and importance of cultural symbols in traditional shadow puppetry, as well as the forms of expression and challenges faced by this art form and cultural heritage. Then, we analyze in detail the definition, characteristics, and application status of immersive virtual reality technology in cultural performance fields while discussing its change and innovation within digital shadow puppetry. Furthermore, we discuss how this technological innovation brings about new forms of expression while also presenting challenges through collisions between tradition and modernity. Finally, we summarize our research findings while prospecting future development directions for presenting cultural symbols within digital shadow puppetry; limitations are also proposed along with future research directions. This study helps further understand how immersive virtual reality technology impacts traditional culture while providing useful references for protecting and inheriting traditional cultures such as digital shadow puppetry.
Keywords: Immersive Virtual Reality Technology; Digital Shadow Puppetry; Cultural Symbols; Technological Change

1. INTRODUCTION

1.1 Background Introduction

Digital shadow puppetry is an emerging art form that combines traditional cultural art with modern technology. Its presentation has significant importance for the protection and inheritance of traditional culture. However, traditional shadow puppetry faces several challenges in

contemporary society, including a decline in audience numbers, a limited performance format, and difficulties in preserving cultural symbols. To address these issues, digital shadow puppetry has emerged at a pivotal moment. By leveraging digital technology, it transforms the cultural symbols of traditional shadow puppetry into digital formats for enhanced presentation, thereby creating a more vibrant and diverse experience for the audience. Immersive virtual reality technology serves as a crucial technical tool in digital shadow puppetry, enabling the creation of an immersive experience that allows audiences to deeply appreciate the charm of this art form. Its successful application in cultural and artistic fields such as museum exhibitions and heritage preservation is well-documented. However, challenges remain when using immersive virtual reality technology in digital shadow puppetry, including how to balance tradition with modernity and preserve cultural symbols' purity. Therefore, this study aims to explore the impact of immersive virtual reality technology on presenting cultural symbols in digital shadow puppetry, providing new ideas for its development. By examining the current state and future trends of digital shadow puppetry comprehensively, we can better promote traditional culture and art's protection, inheritance, and innovation.

1.2 Research Objectives and Significance

This study aims to explore the application of immersive virtual reality technology in representing cultural symbols of digital shadow puppetry, with the goal of promoting the inheritance, innovation, and development of traditional culture. Traditional shadow puppetry is a long-standing intangible cultural heritage in China that embodies rich cultural connotations and folk wisdom. However, due to rapid societal development and the emergence of modern technology, traditional culture faces the risk of marginalization and oblivion. Therefore, by combining immersive virtual reality technology with digital representation techniques for traditional shadow puppetry, new vitality and creativity can be infused into traditional culture, attracting greater attention and participation from younger audiences. Specific objectives include: first, to explore the application methods and effects of immersive virtual reality technology in digital shadow puppetry, to improve the audience's immersion and participation; second, to study the digital expression forms of cultural symbols in digital shadow puppetry, to maintain its original traditional characteristics; third, to balance the relationship between traditional culture and modern technology, to avoid the commercialization and distortion of culture; fourth, to promote the inheritance and innovation of traditional

culture, so that it can better adapt to the needs and aesthetic trends of contemporary society. The significance of this study lies in the comprehensive exploration of the application of immersive virtual reality technology in presenting cultural symbols of digital shadow puppetry, which holds significant and far-reaching value. Firstly, it effectively safeguards and perpetuates traditional culture, disseminating the invaluable cultural heritage of traditional shadow puppetry to a wider audience. Secondly, through innovative utilization of digital and virtual reality technology, it enhances the cultural experience for spectators while augmenting the allure and influence of traditional culture. Lastly, it fosters innovation and development within our culture, advances China's soft power in traditional culture, and bolsters national confidence in our cultural identity. Through this study, we can explore a path that aligns with contemporary trends for inheriting and developing traditional culture while making positive contributions to the flourishing state of Chinese tradition.

2. THE CHARACTERISTICS AND TRADITIONAL PRESENTATION OF CULTURAL SYMBOLS IN DIGITAL SHADOW PUPPET SHOWS

2.1 The Meaning and Importance of Cultural Symbols in Shadow Puppet Shows

As an important part of Chinese traditional culture, shadow puppetry has rich connotation and importance in cultural symbols (Cui & Tian, 2019).In shadow puppetry, various characters, props and plots are carrying profound cultural significance, reflecting the Chinese people's aesthetic concepts, values and historical memories. The characters in shadow puppetry represent different social classes and character traits, such as positive heroes, villains, and the opposition between good and evil, reflecting the ethical concepts and moral codes of traditional Chinese society, as shown in Table 1. Through the performance of these characters, shadow puppetry conveys reflections on good and evil, justice and evil, and leads the audience to think and reflect on social reality.

Table 1: Classification of the Five Major Roles in Shadow Play

Category	Representative Role
Male Role	Positive hero characters, such as Guan Yu and Sun Wukong
Female Role	Female characters, such as Lady White and the Queen Mother
Painted Face	Young playful characters, such as small carp essence, small day incense
The Old Lead	Ugly characters, such as wedding flower wife, Ma Daha
Clown	Funny characters, such as Zhang Sheng, bangs chop Qiao

Secondly, the props and scenery in shadow puppetry are also loaded with rich cultural symbols. For example, the animals such as dragons, phoenixes, fishes and birds commonly seen in shadow puppetry represent auspiciousness, happiness, wealth and other good morals (Ke et al., 2020). While some ancient buildings, utensils and other props reflect the unique flavor and historical background of Chinese traditional culture. Shaanxi, Shanxi and Sichuan are representatives. Shadow puppets in different regions have local cultural flavor and characteristics in their shapes and features. The comparison of the shapes of the first stubble of Shaanxi, Shanxi and Tengchong shadow puppets is shown in Figure 1. These props and sets not only provide the background for the story plot, but also inherit and promote Chinese traditional culture.
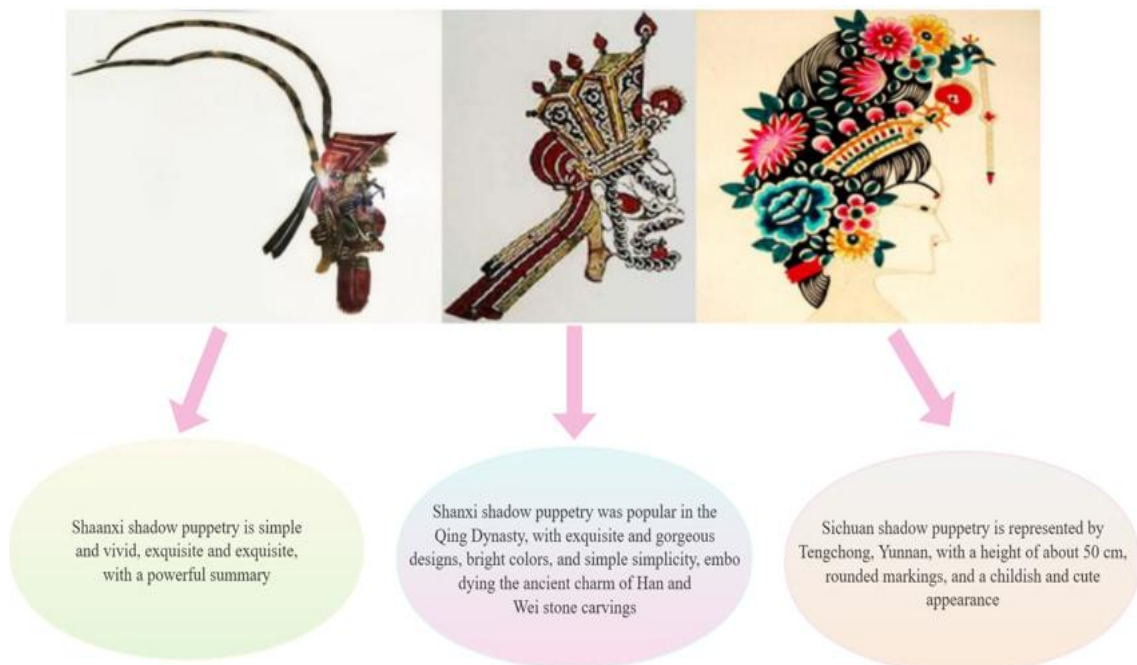

Shaanxi shadow puppetry is simple and vivid, exquisite and exquisite, with a powerful summary

Shanxi shadow puppetry was popular in the Qing Dynasty, with exquisite and gorgeous designs, bright colors, and simple simplicity, embo dying the ancient charm of Han and Wei stone carvings

Sichuan shadow puppetry is represented by Tengchong, Yunnan, with a height of about 50 cm, rounded markings, and a childish and cute appearance

Figure 1: Comparison of the Head Crop Shapes of Shadow Puppets in Shaanxi, Shanxi, and Sichuan

The plots and stories in shadow puppetry are imbued with profound cultural connotations. Many shadow puppet plays draw inspiration from ancient Chinese masterpieces, historical narratives, and folktales such as Journey to the West and The Romance of the Three Kingdoms. These timeless works not only showcase the allure of traditional Chinese literature but also convey contemplations on life, emotions, homeland, and other existential matters (Guo, 2023). Through these narratives, shadow puppetry has the ability to evoke empathy and emotional resonance among audiences while bridging the gap between contemporary spectators and traditional culture. Overall, the cultural symbols embedded within shadow

puppetry are diverse and vibrant; they epitomize both the essence and sagacity of traditional Chinese culture while exploring universal human values. In today's society, despite its gradual decline, shadow puppetry continues to inspire through its spiritual significance and historical importance by facilitating a deeper understanding of China's exceptional heritage.

2.2 Traditional Forms Of Shadow Puppetry

Shadow puppetry, also called shadow puppetry, light puppetry, earth puppetry, and monkey puppetry, is a performance art that uses light to outline animals on leather or cardboard, and then performers can sing while doing so, accompanied by appropriate music. In the history of China, it is a popular folk art, and it has also spread abroad, becoming a global performing art (Xu et al., 2021). Chinese shadow puppetry is a unique art form that combines Chinese folk arts and crafts with the needs of the people. It is an indispensable treasure in the treasure house of Chinese art. During the performance of shadow puppetry, the performers use white curtains to display the scenes of the puppet show, so that the audience can clearly understand the corresponding plot. The characters, scenes, props, etc. in shadow puppetry are very good. Its performance equipment is light, the singing is pleasant, and the performance is moving, so it is welcomed by the masses. Shadow puppetry is a traditional folk art in China that boasts its own unique and rich artistic expression. It is characterized by the use of yang carving to depict facial features and yin carving to showcase clothing, resulting in simple yet bright lines for faces and intricate patterns for bodies and heads. The characters' proportions generally adhere to the principle of five chambers, with deliberately enlarged heads creating a harmonious visual effect through contrast between simplicity and complexity (Zhang, 2022). Additionally, curved contrasts are fully reflected throughout character lines, while geometric segmentation modeling is used for various body parts presented as slender straight block surfaces. Beautiful curved elements are added to face details and clothing designs, breaking through rigid geometric structures to add delicate decorative beauty. Finally, flat colors with various patterns decorate characters' clothes according to their identity characteristics; officials wear pine, crane, blessing or longevity flower motifs while martial artists or monsters don herringbone armor or fish scale armor respectively; maidens wear peony, mandarin duck or butterfly designs etc., dividing different parts of clothing via repetition/overlap techniques that enrich images of characters/beautify decoration as shown in Figure 2.
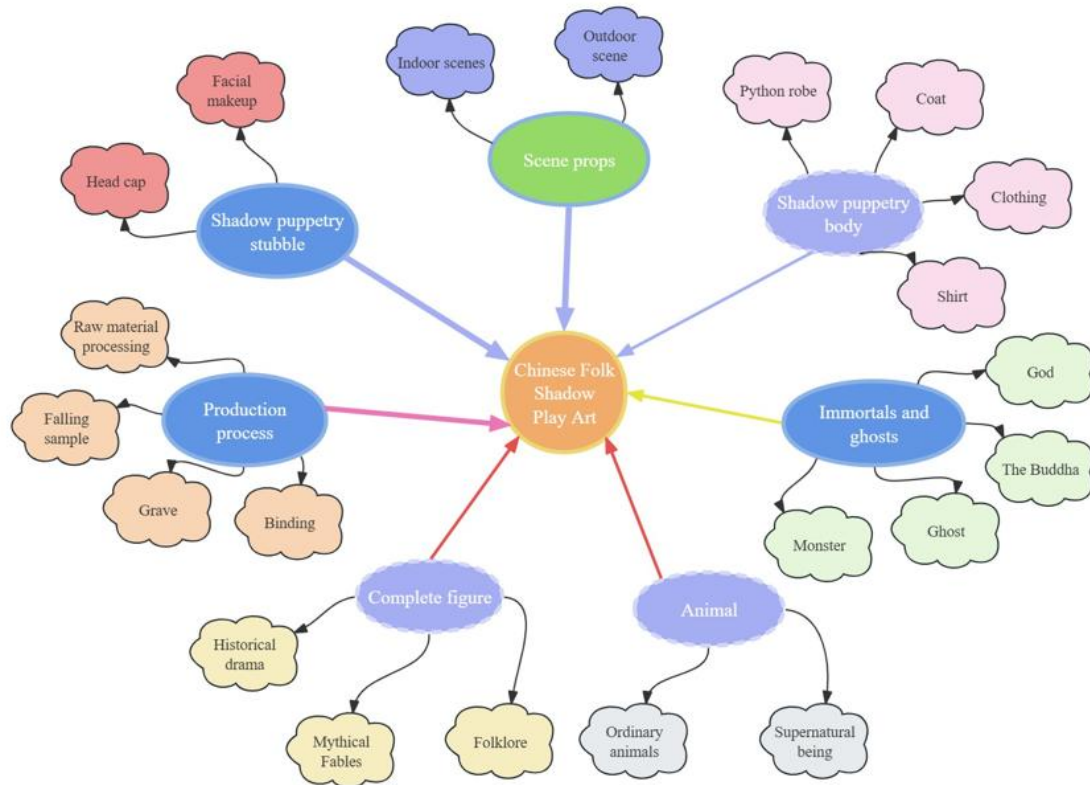
Figure 2: Chinese Folk Shadow Play Art

Shadow puppetry, as the earliest form of drama in China, has played a pivotal role in the development of Chinese culture throughout history. The evolution of modern Chinese television, film, and art films is inseparable from this art form, which has also received high acclaim from European and American countries (Cox et al., 2023). Within traditional shadow puppetry lies a wealth of intricate artistic elements, including the creation and portrayal of characters and scenery that fall under the realm of folk art. Additionally, opera singing forms an integral part of shadow puppet performances. By effectively integrating two-dimensional imagery with theatrical expression, a more immersive audio-visual experience can be delivered to the audience.

2.3 Cultural Inheritance and Innovation of Shadow Puppet Show

(I)Shadow puppetry is the epitome of Chinese culture, boasting a profound historical and cultural heritage as well as serving as a distinctive form of expression within Chinese dramatic art. It encompasses various techniques such as paper cutting, shadow manipulation, and lighting to project an array of vibrant images onto the white screen. Accompanied by narration, music, and other elements, it creates a unique visual spectacle that has earned the title "Pearl of Oriental Art." In terms of cultural legacy,

shadow puppetry encapsulates rich traditional Chinese historical narratives, myths and legends, and folk traditions while reflecting ancient people's ethical values, moral concepts, value systems, and aesthetic preferences (ALIA, 2020). The artistry displayed in shadow puppetry exemplifies the exquisite craftsmanship inherent in traditional Chinese culture while playing an irreplaceable role in its preservation and development. Over time, shadow puppetry has continuously evolved through innovation while staying true to its roots. The integration of modern technology has injected new vitality into this art form; for instance, projection technology has replaced conventional lighting methods while modern audio equipment enhances sound effects. Furthermore, virtual reality technology is combined with shadow puppetry to create immersive performance experiences. Simultaneously, some artists have boldly explored contemporary social issues by incorporating them into their works alongside shadow puppetry elements to infuse it with a more modern sensibility (Huang, 2022). (II) Create a virtual interactive space for shadow puppetry, namely "virtual reality". In comparison to traditional preservation methods such as photography and video recording, this innovative artwork offers a heightened sense of realism and three-dimensionality. It effectively captures the essence of the original work and art in two-dimensional images, surpassing any other medium. The term "virtual" in virtual reality refers to an intangible existence that combines the digital realm represented by the Internet with real-life experiences. Therefore, the creation of a virtual interactive space involves utilizing computer simulation to construct a simulated environment that provides users with visual, auditory, and sensory experiences akin to reality itself. Users can freely engage with this space anytime and anywhere without limitations (Jin, 2021). In summary, virtual reality represents an advanced form of visual processing and interaction through computers that has revolutionized spatial perception compared to traditional human-computer interactions. The establishment of a virtual interactive space for shadow puppetry relies on digital technology. Although it may sound simple in theory, its execution is challenging. It requires meticulous modeling and rendering of numerous images based on the original content of the drama while constructing a three-dimensional setting upon this foundation. Digital technology's development extends beyond stage audio-visual presentations; it transcends geographical boundaries, platforms, and age restrictions alike. By leveraging the internet as its medium, "cloud shadow puppetry" delivers comprehensive and intelligent audio-visual experiences along with cultural education services to audiences (see Figure 3).
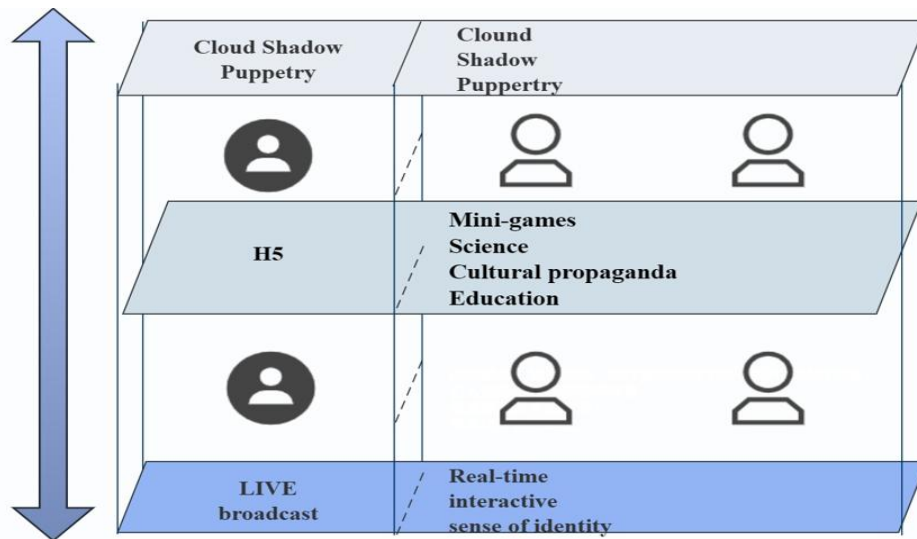
Figure 3: Schematic Diagram of Cloud Shadow Puppets

3. THE INFLUENCE OF IMMERSIVE VIRTUAL REALITY TECHNOLOGY ON THE PRESENTATION OF CULTURAL SYMBOLS IN DIGITAL SHADOW PUPPETRY

3.1 Definition and Characteristics of Immersive Virtual Reality Technology

Immersive virtual reality technology is a technology that uses computer-generated simulation environments to make users feel like they are in them. This technology requires the use of head-mounted displays, gamepads, trackers, and other sensors to allow users to interact and interact with the virtual environment. Immersive virtual reality technology creates unexpected stimuli in the human body's sensory and cognitive systems to create a strong sense of immersion, as shown in Figure 4.
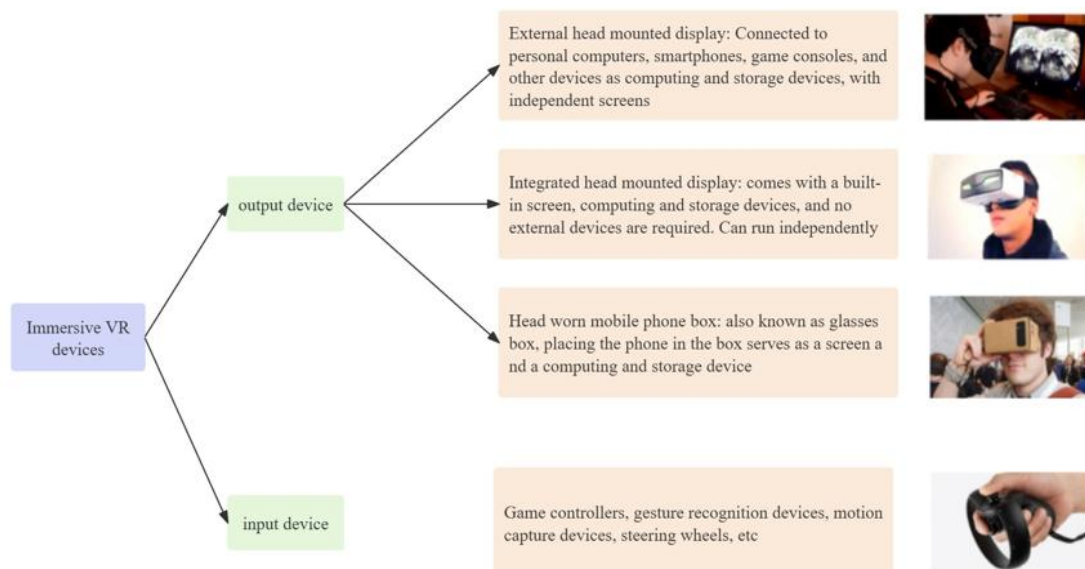

Figure 4: Composition of Immersive VR Devices

This paper introduces a new type of realistic virtual reality system. The technology uses a closed scene and acoustic system to isolate the user's vision and hearing. The user can input relevant information and instructions by using spatial position trackers, data gloves and other input devices (Li & Cao, 2021). Immersive virtual reality technology has characteristics as shown in Figure 5.

Figure 5: Characteristics of Immersive Virtual Reality Technology

3.2 The Application Status of Immersive Virtual Reality Technology in the Field of Cultural Performance

The application of immersive virtual reality technology in the field of cultural expression is gradually showing great potential and influence. Through virtual reality technology, people can experience various cultural activities and traditional arts in a real-life manner, promoting the inheritance and exchange of culture (Rousseaux et al., 2020). Here are some current applications of virtual reality technology in cultural expression: (1) Museums and cultural heritage protection: Many museums and cultural heritage institutions use virtual reality technology to digitally display precious cultural relics, allowing audiences to appreciate cultural relics in a 360-degree virtual space and understand their historical background and cultural value. (2) Cultural activity experience: Through virtual reality technology, people can participate in various cultural activities, such as traditional festival celebrations and folk performances, without geographical restrictions, promoting cross-cultural communication and understanding. (3) Art creation and exhibition: virtual reality technology provides a new platform for artists to create. They can use virtual reality technology to create digital art and display their works in virtual galleries, realizing interactive display and all-round experience of artistic works

(McSwan, 2021).(4) Cultural education and popularization: virtual reality technology provides a more vivid and intuitive way for cultural education. Through virtual reality technology, students can understand historical events and cultural backgrounds in a more immersive way, improving learning interest and effect. (5) Cultural tourism promotion: virtual reality technology can help promote cultural tourism resources, provide tourists with virtual tourism experience, and attract more people to pay attention to and participate in cultural tourism activities. In general, the application of virtual reality technology in the field of cultural expression is constantly expanding and deepening, bringing new possibilities for cultural inheritance, exchange and expression, and promoting the development and prosperity of the cultural industry. In the future, with the continuous progress and improvement of technology, it is believed that virtual reality technology will play a more important role in the cultural field (Ishida & Higa, 2023).

3.3 The Changes and Innovations of Immersive Virtual Reality Technology to Digital Shadow Puppet Show

Virtual reality is a convergence of computer simulation, computer graphics, human-computer interaction, multimedia technology, and other cutting-edge technologies. Within the virtual 3D environment generated by advanced computer simulation techniques, users can seamlessly observe objects in real-time without any limitations or constraints. As users interact and navigate through this immersive space, computers execute intricate operations to transmit precise 3D imagery instantaneously (Karen, 2023). From an artistic standpoint, virtual reality technology represents a novel advancement that transforms imaging technology into encompassing 360-degree photography capabilities while facilitating corresponding processing workflows. It enables real-time control within three dimensions and thus brings about a qualitative shift in aesthetics that significantly diverges from conventional art appreciation practices. By assuming the role of the "master" within the virtual realm, it transcends boundaries and transitions from passivity to activity. The traditional art of shadow puppetry employs props, lighting, and other techniques to create a third-person viewing experience for the audience, offering a certain level of visual immersion. However, due to limitations such as time constraints, performer expertise, fixed venues, and limited space availability, the introduction of virtual reality technology allows the public to directly enter a virtual stage at any given time. This enables them to enjoy 3D interactive shadow puppetry performances (Patrick, 2023), thereby experiencing the artistic allure while fostering a deeper connection with

traditional culture. The interactivity and immersive nature of this technology highlight human subjectivity and facilitate a profound fusion between humanity and art, presenting vast opportunities for further development. In the process of using virtual reality technology to simulate the production of shadow puppetry, students who are interested in shadow puppetry but have no time to learn, or who are inspired to learn and hope to experience shadow puppet culture as soon as possible are the main ones. (Currently mainly used in theoretical teaching in colleges and universities, setting up school-based courses, showing ethnic customs museums, large shopping centers, etc.) Shadow puppetry is a special performing art full of creativity, which is an artistic and cultural form integrating various cultural developments, folk traditions and various regional characteristics. Whether from the perspective of the development of folk culture or from the perspective of artistic aesthetics, we can see the learning experience value of traditional culture (Yigitbas et al., 2023). We need to stand in the position of the experiencer and establish the corresponding database. Based on the existing digital information resources, the relevant data are classified to make the relevant data more perfect, as shown in Table 2.

Table 2: Key Points of Conceptual Design for Shadow Puppetry Simulation Production in Virtual Reality Technology

Key Points	Demand
Picture	Series static display, panoramic application renderings
Model	Shadow play craftsman, production tools, raw materials, display dance
Audio Frequency	The text, fragments, dubbing and mimicry of shadow play can be personalized edited by computer based on the audio library to realize the audience's DIY voice change.
Animation	Initial education, Show animation: The education of production learning show animation character animation material library creation.
Material Quality	Simulated realistic material properties: shadow play raw materials, shadow play art, display stage
Interactive	1. Environmental design for different age groups. 2. Display, learning and game design for different needs. 3. Different forms of interaction.

4. TECHNOLOGY CHANGES TRADITION: INNOVATION AND CHALLENGE OF DIGITAL SHADOW PUPPETRY CULTURAL SYMBOL PRESENTATION

4.1 Innovation through Technology: New Forms of Digital Shadow Puppetry

(I) Digital storage: The preservation of shadow puppetry in digital format

is a crucial method for safeguarding historical data and cultural heritage, as well as preventing their loss and destruction. Digital preservation entails the digitization of physical objects, images, and sounds related to shadow puppetry, establishing a digital archive dedicated to this art form, and providing valuable data support for its protection and research endeavors. Firstly, the physical elements of shadow puppetry (such as characters, props, and scripts) are scanned using scanners or cameras to create digital images that are stored in computers, forming a comprehensive "shadow puppetry" digital image library. This approach enables enhanced analysis and comparison of shadow puppets' visual aspects including their shapes and colors while offering abundant materials and inspiration for future performances and innovations (Savickaite et al., 2022). Secondly, the entire process of shadow puppetry performance is recorded using digital cameras, mobile phones or other devices before being stored on electronic devices or cloud servers. These recordings constitute an invaluable resource known as the "shadow puppet film" collection which facilitates easy access to learning about performance skills, actions expressions exhibited during shadow puppet shows along with accompanying soundtracks. Moreover, it provides diverse avenues for appreciating this art form through various forms of artistic expression such as education initiatives. Lastly but not least importantly ,the voices associated with shadow puppetry are captured through recording techniques employing mobile phones or other audio recording devices before being stored on electronic devices or cloud servers thereby creating a rich repository referred to as the "shadow puppetry" digital sound source library.

(II) Create a Virtual Interaction Space for Shadow Puppetry: The term "virtual interactive space" refers to the concept of "virtual reality". In comparison to traditional forms of media such as photography and video, this innovative art form offers a heightened sense of realism and three-dimensionality. It effectively captures the essence and integrity of the original artwork within a two-dimensional image, as depicted in Figure 6. The term "virtual" in virtual reality represents an abstract computer-generated representation that merges seamlessly with tangible reality, thereby integrating digital spaces represented by the Internet into our physical lives (Qian, 2022). Digital technology plays a crucial role in establishing the virtual interactive space for shadow puppetry. However, achieving this is no easy task; it requires creating a three-dimensional representation of shadow puppetry within the real world. This process involves modeling and rendering numerous images based on the original dramatic content, followed by constructing a three-dimensional scene

upon this foundation. For shadow puppetry, this step holds immense significance since its performance environment is dynamic in nature. To accomplish this feat, one must first capture real-life scenes before combining them with either scene requirements or the author's imaginative vision to construct an appropriate virtual scene model (Dincelli & Yayla, 2022).
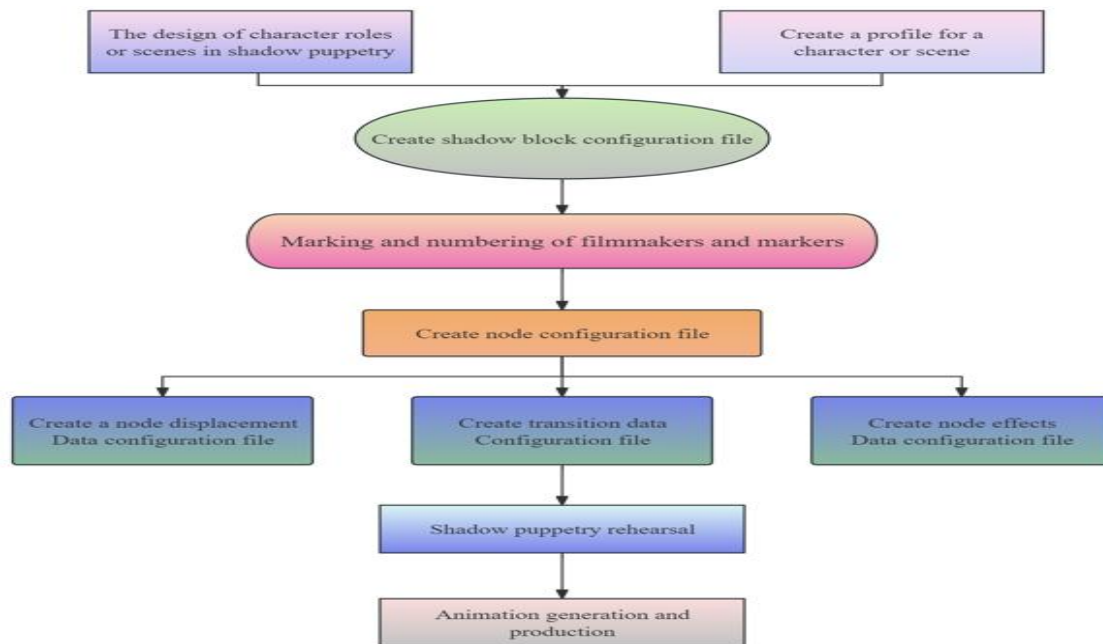

Figure 6: Steps for Generating 2D Animation for Shadow Puppetry

(III) Immersive Experience of Digital Shadow Play: Through the utilization of virtual reality (VR), augmented reality (AR), mixed reality (MR), and other cutting-edge technologies, the digital content of shadow puppetry can be seamlessly integrated with real-life scenes, resulting in an immersive experience that allows audiences to directly immerse themselves in the captivating allure of this traditional art form. Consequently, not only does this enhance interaction and engagement with shadow puppetry, but it also serves as a catalyst for stimulating audience imagination and creativity, thereby providing ample room for innovation and development within this domain (Pyun et al., 2022). In collaboration with shadow puppetry inheritors, Hyundai Research Institute has successfully curated a collection of digital shadow puppets through the application of AI artificial intelligence technology, effectively merging traditional shadow puppetry with contemporary artistic expressions.

4.2 Technological Challenges: Collision and Integration of Tradition and Modernity

As a traditional cultural form, digital shadow puppetry faces

technological challenges in modern society, namely the collision and integration of tradition and modernity. With the continuous development of digital technology, the traditional performance methods and presentation forms of shadow puppetry are undergoing profound changes, as shown in Table 3.

Table 3: Comparison between Traditional Shadow Puppetry and Modern Shadow Puppetry

Characteristic	Wayang Kulit	Modern Shadow Puppetry
Production Process	Handmade, inheriting traditional skills	Utilizing modern technology to assist in production and digital processing
Plot Performance	Mostly classical traditional stories with religious themes	More diverse themes, including modern stories and science fiction themes
Performance Format	Mainly manual shadow puppetry, supplemented by music accompaniment	Utilizing projection technology for richer sound effects
Audience Group	More inclined towards elderly audiences and traditional culture enthusiasts	More attractive to the younger generation audience and expanding the market
Communication Methods	Traditional venue performances are the main focus, while traditional media dissemination	Mainly spread through online platforms and promote through social media

In the collision between tradition and modernity, digital technology has infused traditional shadow puppetry with renewed vitality. Through digital processing and presentation, shadow puppetry can achieve enhanced visual effects, diversify its artistic expressions, amplify its audiovisual impact, and captivate a larger audience of younger generations (Nehmé et al., 2020). Simultaneously, digital technology has opened up new possibilities for shadow puppetry by incorporating special effects, interactivity, virtual reality, and other elements. This integration enables traditional culture to seamlessly adapt to the needs of contemporary audiences in modern society. However, there are evident technical challenges as well. The digital production process necessitates the expertise of professional and technical personnel, while traditional handmade skills may confront the risk of obsolescence. Moreover, the digital presentation method relies on

electronic equipment and internet support, diverging from conventional physical performance methods and potentially demanding increased investment and costs.

Consequently, finding a harmonious equilibrium between tradition and modernity becomes imperative in preserving the authenticity and distinctive allure of traditional culture while simultaneously captivating contemporary audiences (Jang et al., 2021). In summary, digital technology has brought unprecedented opportunities and challenges to traditional shadow puppetry. It is necessary to find a path of innovative development between tradition and modernity, so that this excellent traditional culture form can glow with new vitality and vigor in the contemporary era.

4.3 Inheritance and Reconstruction of Cultural Symbols: How to Balance the Relationship between Tradition and Modernity

In the digital age, the inheritance and reshaping of cultural symbols has become an important issue. As an important part of national culture, traditional cultural symbols bear rich historical and emotional connotations, while the intervention of modern technology has brought new ways of expression and transmission for these symbols. In the traditional art form of digital shadow puppetry, how to balance the relationship between tradition and modernity has become a challenge in front of us. The inheritance of traditional cultural symbols needs to be realized in innovation (Ikbal et al., 2020).

Digital shadow puppetry can present traditional shadow puppetry on a broader stage through virtual reality, artificial intelligence and other technological means, attracting more young audiences' attention and participation. At the same time, the story plot, character setting and other elements of traditional shadow puppetry can also be reshaped in the digital presentation mode to meet the aesthetic needs of modern audiences. To balance the relationship between tradition and modernity, it is necessary to respect the essence of cultural symbols.

In the process of digital communication, we should not simply pursue novelty and show off technology, but maintain respect and understanding of traditional cultural symbols. The values and aesthetic emotions contained in traditional cultural symbols should be reasonably inherited and displayed to ensure the continuity and uniqueness of traditional culture, as shown in Figure 7.
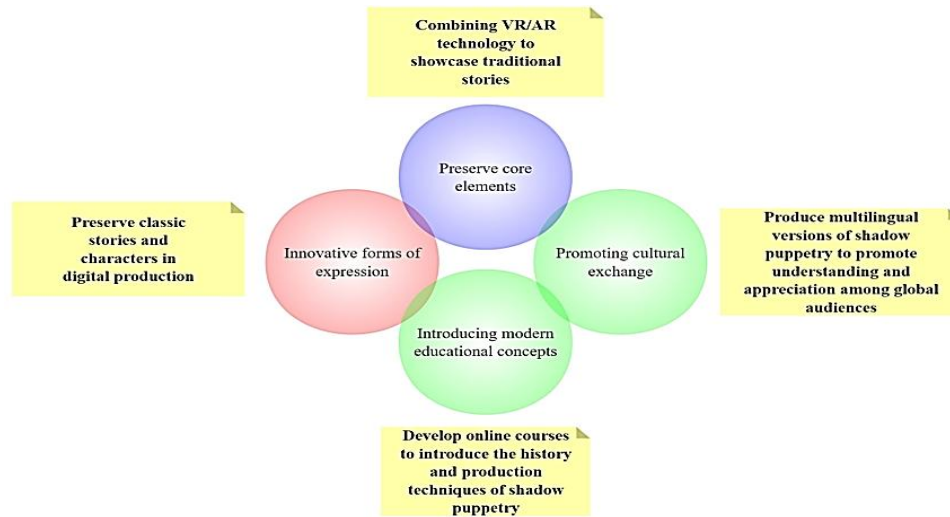
Figure 7: Balancing the Relationship between Traditional Shadow Puppetry and Modern Shadow Puppetry

Finally, the balance between tradition and modernity needs to be explored and summarized in practice. The development of digital shadow puppetry requires the joint efforts of artists, technicians, audiences and other parties, through exchanges and cooperation, to explore a development path that meets the needs of contemporary society (Parong & Mayer, 2021). Only in the process of inheritance and innovation, can digital shadow puppetry truly realize the inheritance and reshaping of cultural symbols, and shine with new vitality and energy.

5. CONCLUSION

The impact of immersive virtual reality technology on the presentation of cultural symbols in digital shadow puppetry is profound and positive. Through the transformation of traditional perspectives by technology, we can observe that virtual reality injects fresh vitality and vigor into digital shadow puppetry. Firstly, virtual reality technology introduces novel forms and artistic techniques to traditional shadow puppetry, enhancing the dissemination effectiveness and expressive form of its cultural symbols. Secondly, this technology renders traditional culture more interactive and participatory, facilitating easier acceptance and appreciation among younger generations towards their heritage. Lastly, immersive virtual reality opens up new possibilities for the preservation and advancement of digital shadow puppetry, promoting cultural innovation alongside traditional inheritance. Therefore, immersive virtual reality technology has a significant impact on the presentation of cultural symbols in digital shadow puppetry by infusing it with renewed drive and dynamism for safeguarding,

disseminating, as well as innovating upon our rich traditions.

6. ACKNOWLEDGEMENTS

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